

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CB331707	Client:	Landau Associates
Date Received:	05/21/12	Project:	1198001.010.011, F&BI 205301
Date Extracted:	05/24/12	Lab ID:	205301-01
Date Analyzed:	05/29/12	Data File:	205301-01.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower	Upper
Germanium	98	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Copper	86.6
Zinc	899

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Date Analyzed:	05/29/12	Data File:	205301-01.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

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Zinc	899

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Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Landau Associates
Date Received:	Not Applicable	Project:	1198001.010.011, F&BI 205301
Date Extracted:	05/24/12	Lab ID:	I2-338 mb
Date Analyzed:	05/29/12	Data File:	I2-338 mb.011
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower	Upper
Germanium	112	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Copper	<1
Zinc	<1

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Client ID:	Method Blank	Client:	Landau Associates
Date Received:	Not Applicable	Project:	1198001.010.011, F&BI 205301
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Date Analyzed:	05/29/12	Data File:	I2-338 mb.011
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower	Upper
Germanium	112	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Copper	<1
Zinc	<1

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ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/12

Date Received: 05/21/12

Project: 1198001.010.011 PO M08921, F&BI 205301

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 205300-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	2.83	93	92	52-134	1
Zinc	ug/L (ppb)	50	1,730	95 b	129 b	51-142	30 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	84	81-120
Zinc	ug/L (ppb)	50	84	82-120

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ENVIRONMENTAL CHEMISTS

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Date Received: 05/21/12

Project: 1198001.010.011 PO M08921, F&BI 205301

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ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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205301

~~X~~Seattle/Edmonds (425) 778-0907

☐ Tacoma (253) 926-2493

☐ **Spokane** (509) 327-9737

☐ Portland (503) 542-1080

☐

**LANDAU
ASSOCIATES**

Please Bill Alaskan Copper^m
P.O. MØ8921

ML XIE

05-21-12

Date _____

5/21/12

Page 1 of 1
$$AT_2$$

Chain-of-Custody Record

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205301

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P.O. MØ8921

ML ~~XE~~

05-21-12

Date _____

5/21/12

Page 1 of 1 A_{T2}

Chain-of-Custody Record

[illegible]

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative

Row 8/03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

June 8, 2012

Joe Kalmer, Project Manager
Landau Associates
130 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Kalmer:

Included are the results from the testing of material submitted on May 21, 2012 from the 1198001.010.011 PO M08921, F&BI 205301 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Matthew Langston
Project Manager

Enclosures

c: Gerald Thompson, Gary Huitsing, Rosemary Trimmer
NAA0608R.DOC

FRIEDMAN & BRUYA, INC.

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e-mail: fbi@isomedia.com

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Project Manager

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